SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier
Trade name or designation of the mixture M8534
Registration number -
Synonyms None.
Issue date 25-November-2015
Version number 02
Revision date 18-December-2018
Supersedes date 25-November-2015

1.2. Relevant identified uses of the substance or mixture and uses advised against
Identified uses Polyvinyl alcohol-based film used as a water-soluble unit-dose delivery system.
Uses advised against None known.

1.3. Details of the supplier of the safety data sheet
Company name MonoSol LLC
Address 707 East 80th Place, Suite 301
Merrillville, IN 46410
Country United States
General Assistance Phone +1 219-762-3165
Fax +1 219-763-4477
E-mail reach@monosol.com
Website www.MonoSol.com

1.4. Emergency Phone Numbers
CHEMTREC (London) +(44)-870-8200418 & 1 703-527-3887
CHEMTREC Sweden (Stockholm) +(46)-85203403
CHEMTREC Germany +(44)-870-8200418
CHEMTREC Hungary (Budapest) +(36)-18088425
CHEMTREC France + (33)-975181407
CHEMTREC Poland (Warsaw) +(48)-223988029
CHEMTREC Netherlands +(31)-85880596
CHEMTREC Spain 900-868538
CHEMTREC Italy 800-789-767

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture
The mixture has been assessed and/or tested for its physical, health and environmental hazards and the following classification applies.

Classification according to Regulation (EC) No 1272/2008 as amended
This mixture does not meet the criteria for classification according to Regulation (EC) 1272/2008 as amended.

Hazard summary Not classified for health hazards. However, occupational exposure to the mixture or substance(s) may cause adverse health effects.

2.2. Label elements
Label according to Regulation (EC) No. 1272/2008 as amended
Hazard pictograms None.
Signal word None.
Hazard statements Not applicable.
Precautionary statements

Prevention
Observe good industrial hygiene practices.

Response
Wash hands after handling.

Storage
Store away from incompatible materials.

Disposal
Dispose of waste and residues in accordance with local authority requirements.

Supplemental label information
None.

2.3. Other hazards
Not a PBT or vPvB substance or mixture.

SECTION 3: Composition/information on ingredients

3.2. Mixtures
The components are not hazardous or are below required disclosure limits.

List of abbreviations and symbols that may be used above
#: This substance has been assigned Union workplace exposure limit(s).
M: M-factor
PBT: persistent, bioaccumulative and toxic substance.
vPvB: very persistent and very bioaccumulative substance.

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. *Product is a non-hazardous mixture of which the composition is a trade secret

Composition comments
The full text for all H-statements is displayed in section 16.

SECTION 4: First aid measures

General information
Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

4.1. Description of first aid measures

Inhalation
Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact
Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact
Rinse with water. Get medical attention if irritation develops and persists.

Ingestion
Rinse mouth. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects, both acute and delayed
Exposure may cause temporary irritation, redness, or discomfort.

4.3. Indication of any immediate medical attention and special treatment needed
Treat symptomatically.

SECTION 5: Firefighting measures

General fire hazards
No unusual fire or explosion hazards noted.

5.1. Extinguishing media
Suitable extinguishing media
Water spray. Alcohol resistant foam. Dry powder. Carbon dioxide (CO2).

Unsuitable extinguishing media
Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture
Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

5.3. Advice for firefighters
Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods
Use water spray to cool unopened containers.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel
Keep unnecessary personnel away. In case of spills, beware of slippery floors and surfaces. For personal protection, see section 8 of the SDS.

For emergency responders
Keep unnecessary personnel away. Use personal protection recommended in Section 8 of the SDS.

6.2. Environmental precautions
Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up
Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

6.4. Reference to other sections
For personal protection, see section 8 of the SDS. For waste disposal, see section 13 of the SDS.
SECTION 7: Handling and storage

7.1. Precautions for safe handling
Avoid prolonged exposure. Observe good industrial hygiene practices.

7.2. Conditions for safe storage, including any incompatibilities
Store in tightly closed container. Store away from incompatible materials (see Section 10 of the SDS).

7.3. Specific end use(s)
Not available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occupational exposure limits</td>
<td>No exposure limits noted for ingredient(s).</td>
</tr>
<tr>
<td>Biological limit values</td>
<td>No biological exposure limits noted for the ingredient(s).</td>
</tr>
<tr>
<td>Recommended monitoring procedures</td>
<td>Follow standard monitoring procedures.</td>
</tr>
<tr>
<td>Derived no effect levels (DNELs)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Predicted no effect concentrations (PNECs)</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

8.2. Exposure controls
Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Individual protection measures, such as personal protective equipment

<table>
<thead>
<tr>
<th>Category</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>General information</td>
<td>Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.</td>
</tr>
<tr>
<td>Eye/face protection</td>
<td>Wear safety glasses with side shields (or goggles).</td>
</tr>
<tr>
<td>Skin protection</td>
<td>- Hand protection: Wear appropriate chemical resistant gloves.</td>
</tr>
<tr>
<td></td>
<td>- Other: Wear suitable protective clothing.</td>
</tr>
<tr>
<td>Respiratory protection</td>
<td>In case of insufficient ventilation, wear suitable respiratory equipment.</td>
</tr>
<tr>
<td>Thermal hazards</td>
<td>Wear appropriate thermal protective clothing, when necessary.</td>
</tr>
</tbody>
</table>

Hygiene measures
Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Environmental exposure controls
Environmental manager must be informed of all major releases.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Solid.</td>
</tr>
<tr>
<td>Form</td>
<td>Film.</td>
</tr>
<tr>
<td>Colour</td>
<td>Colourless to light yellow. Translucent.</td>
</tr>
<tr>
<td>Odour</td>
<td>May have a slight acetic acid odor</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available.</td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flash point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available.</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
</tr>
<tr>
<td>Upper/lower flammability or explosive limits</td>
<td></td>
</tr>
<tr>
<td>Flammability limit - lower (%)</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
Flammability limit - upper 
(%)  
Not available.

Vapour pressure  
Not available.

Vapour density  
Not available.

Relative density  
Not available.

Solubility(ies) 
Solubility (water)  
Not available.

Partition coefficient  
(n-octanol/water)  
Not available.

Auto-ignition temperature  
Not available.

Decomposition temperature  
Not available.

Viscosity  
Not available.

Explosive properties  
Not explosive.

Oxidising properties  
Not oxidising.

9.2. Other information  
No relevant additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity  
The product is stable and non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability  
Material is stable under normal conditions.

10.3. Possibility of hazardous reactions  
No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid  
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

10.5. Incompatible materials  
Strong oxidising agents.

10.6. Hazardous decomposition products  
No dangerous reaction known under conditions of normal use.

SECTION 11: Toxicological information

General information  
Occupational exposure to the substance or mixture may cause adverse effects.

Information on likely routes of exposure  
Inhalation  
Prolonged inhalation may be harmful.

Skin contact  
No adverse effects due to skin contact are expected.

Eye contact  
Direct contact with eyes may cause temporary irritation.

Ingestion  
May cause discomfort if swallowed. However, ingestion is not likely to be a primary route of occupational exposure.

Symptoms  
Exposure may cause temporary irritation, redness, or discomfort.

11.1. Information on toxicological effects

Acute toxicity  
Not known.

Skin corrosion/irritation  
Due to partial or complete lack of data the classification is not possible.

Serious eye damage/eye irritation  
Due to partial or complete lack of data the classification is not possible.

Respiratory sensitisation  
Due to partial or complete lack of data the classification is not possible.

Skin sensitisation  
Due to partial or complete lack of data the classification is not possible.

Germ cell mutagenicity  
Due to partial or complete lack of data the classification is not possible.

Carcinogenicity  
Due to partial or complete lack of data the classification is not possible.

Hungary. 26/2000 EüM Ordinance on protection against and preventing risk relating to exposure to carcinogens at work (as amended)  
Not listed.

Reproductive toxicity  
Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - single exposure  
Due to partial or complete lack of data the classification is not possible.

Specific target organ toxicity - repeated exposure  
Due to partial or complete lack of data the classification is not possible.

Aspiration hazard  
Due to partial or complete lack of data the classification is not possible.

Mixture versus substance information  
No information available.

Other information  
Not available.
SECTION 12: Ecological information

12.1. Toxicity
The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.2. Persistence and degradability
No data is available on the degradability of any ingredients in the mixture.

12.3. Bioaccumulative potential
Bioconcentration factor (BCF) Not available.

12.4. Mobility in soil
No data available.

12.5. Results of PBT and vPvB assessment
Not a PBT or vPvB substance or mixture. Not available.

12.6. Other adverse effects
No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13: Disposal considerations

13.1. Waste treatment methods
Residual waste Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

EU waste code The Waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Disposal methods/information Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Special precautions

SECTION 14: Transport information

ADR
14.1. - 14.6.: Not regulated as dangerous goods.

RID
14.1. - 14.6.: Not regulated as dangerous goods.

ADN
14.1. - 14.6.: Not regulated as dangerous goods.

IATA
14.1. - 14.6.: Not regulated as dangerous goods.

IMDG
14.1. - 14.6.: Not regulated as dangerous goods.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations
Authorisations

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorization, as amended
Not listed.

Restrictions on use

Regulation (EC) No. 1907/2006, REACH Annex XVII Substances subject to restriction on marketing and use as amended
Not listed.

Directive 2004/37/EC: on the protection of workers from the risks related to exposure to carcinogens and mutagens at work, as amended.
Not listed.

Other EU regulations

Directive 2012/18/EU on major accident hazards involving dangerous substances, as amended
Not listed.

Other regulations

The product is classified and labelled in accordance with Regulation (EC) 1272/2008 (CLP Regulation) as amended. This Safety Data Sheet complies with the requirements of Regulation (EC) No 1907/2006, as amended.

National regulations

Follow national regulation on the protection of workers from the risks of exposure to carcinogens and mutagens at work, in accordance with Directive 2004/37/EC.

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

List of abbreviations
Not available.

References
Not available.

Information on evaluation method leading to the classification of mixture
The classification for health and environmental hazards is derived by a combination of calculation methods and test data, if available.

Full text of any H-statements not written out in full under Sections 2 to 15
None.

Revision information
This document has undergone significant changes and should be reviewed in its entirety.

Training information
Follow training instructions when handling this material.

Disclaimer
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.